

REMARKS

Claims 1-20 were previously pending and have been finally rejected. Upon entry of the present amendment, claims 12 and 15-20 are pending in the application. Claims 1-11 and 13-14 have been canceled, and the dependency of claims 12 and 15 changed from independent claim 1 to independent claim 16. Applicants respectfully request entry of the amendment, since the amendment merely represents cancellation of claims and simplification of issues for appeal.

The amendment to claim 16 more clearly states an implied property of the composition, as supported on page 5, lines 1-4, of the specification, which states: "A particular surprise was that the EC materials of the invention were...stable on storage."

Amendments to, cancellation of, and additions to, the claims, as set forth above, are made in order to streamline prosecution in this case by limiting examination and argument to certain claimed embodiments that presently are considered to be of immediate commercial significance. Amendment or cancellation of the claims is not in any manner intended to, and should not be construed to, waive Applicants' right in the future to seek such unamended or cancelled subject matter, or similar matter (whether in equivalent, broader, or narrower form) in the present application, and any continuation, divisional, continuation-in-part, RCE, or any other application claiming priority to or through the present application, nor in any manner to indicate an intention, expressed or implied, to surrender any equivalent to the claims as pending after such amendments or cancellations.

To briefly recap, the present invention relates to an electrocoat material which comprises a bismuth subsalicylate compound. Surprisingly it was found that the electrocoat materials of the invention were easy to prepare, were stable on storage, featured an optimum particle size of the dispersed constituents, and possessed very good filterability. Their electrophoretic deposition on electrically conductive substrates was easy and trouble-free. The resultant electrocoats were free from surface defects due to inhomogeneities while at the same time affording outstanding corrosion protection and edge protection. This was in contrast to the prior art, for example, EP 0642558, mentioned on page 1, line 26, to page 3, line 9, of the specification, since the salts of

long-chain acids gave rise to defects as a result of oil exudations, whereas inorganic bismuth salts are difficult to disperse by mixing them into a binder or into a pigment paste.

1. Rejection of claims 1-15 under 35 U.S.C. §103(a) as being unpatentable over Klein (US 5,965,000) in light of or in view of Ikenoue et al. (US 6,730,203 B2).

The Office Action states that the rejection is based on reasons of record.

This rejection is believed moot in view of the cancellation of claims 1-11 and 13-14. Claims 12 and 15 have been amended to depend on independent claim 16, which is not subject to this rejection.

2. Rejection of claims 16-20 under 35 U.S.C. §103(a) as being unpatentable over Klein (US 5,965,000) in light of or in view of Ikenoue et al. (US 6,730,203 B2).

The Office Action states that Klein discloses an electrocoat concentrate that has a solids content of 20 wt.% (Example 3). The Office Action further states that bismuth salicylate is one of the examples of the bismuth compound used with a concentration of 0.5 to 5 wt.% (column 6, lines 41-4). Klein is also cited for disclosing the incorporation of a bismuth compound in pigment pastes (column 7, lines 1-4) and for disclosing a grinding resin in Example 3(b) in column 9. (In the previous Office Action, Ikenoue et al. (hereafter "Ikenoue") was cited for teaching a coating method in which the cationic resin comprises a hydroxyl group.)

This rejection is respectfully traversed. Klein actually uses, in all the working examples of an electrocoat composition, the actual use of a bismuth salt of an aliphatic carboxylic acid, namely bismuth dimethylolpropionate bishydroxide, which compound is water-soluble and bears no predictable or obvious relationship to bismuth subsalicylate. It has now been found, however (as stated on page 1, line 26, to page 2, line 9, of the present specification), that readily available salts of aliphatic acids can give rise to defects as a result of oily exudations when used in cationic binders. Even more telling is the number of patents (such as those cited on pages 1 to 3 of the present specification) that actually use or mention aliphatic carboxylic acids such as dimethylpropionic while making no mention of bismuth subsalicylate. It is respectfully submitted that the mere mention in Klein of bismuth salicylate, among other possible catalysts that were not used cannot rule out a selection invention in view of unexpected results. The skilled artisan

would have no reason to expect that the use of bismuth subsalicylate would provide superior results, in an electrocoat composition, particularly in a different electrocoat composition made by a different process. One might reasonably suppose that particles of an insoluble bismuth compound might very well create surface defects or other inhomogeneities in the coating.

Klein mentions, in column 6, the possibility of using “bismuthates, and/or in the form of organic bismuth complexes and/or as bismuth salts of organic carboxylic acids,” including acetylacetone ligands (of which bismuth salicylate is one example). At the same time, however, Klein states with particular emphasis that, “The bismuth salts of aliphatic hydroxycarboxylic acids are particularly suitable.” [Emphasis added, column 6, lines 43 to 44 of Klein.] Furthermore, Klein states. “The compound is preferably at least partially water-soluble; it is particularly preferably water-soluble.” [Column 6, lines 53-55.] Thus, any mention of bismuth subsalicylate by Klein is as a less preferred compound, among more preferred compounds, although a member of a preferred class of catalysts, for example, compared to compounds of lead, tin, titanium, iron and lanthanum, also mentioned by Klein in column 6, lines 14-20. Furthermore, Klein does not specify use of a pulverulant bismuth subsalicylate.

Significantly, nowhere does Klein mention the possible adverse affects of a bismuth salt on leveling and surface coatings on the resulting coating. In contrast, the resultant electrocoats of the present invention were free from surface defects caused by inhomogeneities, while at the same time affording outstanding corrosion protection and edge protection, as shown in the examples on pages 19 to 26 and, specifically, with respect to the surprising results, pages 25 to 26.

It is also significant that Klein requires 35 to 50 wt. % solids, which is defined as “between 35 and 50 wt.%” in col.4, lines 30-32, and again in col. 7, line 14:

It is of essential significance to the invention...that the resultant cathodic electrocoating lacquer concentrate has a solids content of between 35 and 50 wt.%....” [Emphasis added.]

In contrast, the composition of present claim 16 requires 5 to 35% by weight solids. Moreover, the example in the present specification comprises 20 wt.% solids, compared to 65 wt.% in the example in Klein, a very substantial difference in practice.

Importantly, the present composition is a storage stable electrocoat composition that can be used without further dilution. In contrast, Klein is directed to a storage stable concentrate or paste and shows, by way of comparison, that cathodic electrocoating compositions that have a lower viscosity (62 and 284 MPa·sec) were not stable in storage without constant stirring. [Claim 1 and Example 2 of Klein, particularly Column 9, lines 29-33.] Thus, there is no reason to expect that one would use particles of a bismuth subsalicylate in a stable non-concentrate, such as a 20% solution, or that it would provide superior dispersibility, as stated in the present specification:

A particular surprise was that the EC materials of the invention were easy to prepare, were stable on storage, featured an optimum particle size of the dispersed constituents, and possessed very good filterability. [Page 5, lines 1-5, of the specification.]

Furthermore, present Claim 17 further requires that the composition is the product of combining a dispersion comprising the binder and crosslinking agent with a pigment paste comprising the bismuth subsalicylate compound that is mixed and milled with the pigment. In contrast, Klein mixes a paste with deionized water to obtain a composition that is immediately added to a bath for coating. Klein, at column 10, lines 9-12. There is no mention in Klein of milling bismuth subsalicylate with the pigment, but merely stirring. Klein, at column 9, line 56-64. The storage stable paste of Klein contains the binder and crosslinker, as well as the pigment and bismuth dimethylolpropionate. These are clearly essential features of Klein's paste, in distinct contrast to the presently claimed dispersed composition.

With respect to the secondary reference, Ikenoue further underscores the unobviousness of the present invention. Ikenoue states that a bismuth-containing compound can be used in a cationic electrodeposition coating composition. However, the very long list and description of such compounds, in column 6, lines 38, to Column 8, line 18, once again points to compounds comprising an aliphatic carboxylic acid, particularly in lines 50-60. The Examples in Ikenoue use bismuth hydroxide (col. 24, line 52). Hence, Ikenoue cannot correct the deficiencies of Klein.

Taken as a whole, it is respectfully submitted that the cited combination fails to provide the requisite motivation for a prima facie case of obviousness.

Reconsideration and removal of the obviousness rejection of claims 12 and 15-20 is respectfully requested in view of the foregoing remarks.

3. **Rejection of claims 1-15 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 4, 7-14, 16 and 18 of copending Application No. 11/416,909.**

Applicants thank the Examiner for pointing out the potential obviousness-type double patenting issue between the claims of the present application and copending Application No. 11/416,909. Applicants herewith submit a terminal disclaimer over copending Application No. 11/416,909.

CONCLUSION

Applicants respectfully submit that the Application and pending claims are patentable in view of the foregoing amendments and/or remarks. A Notice of Allowance is respectfully requested. As always, the Examiner is encouraged to contact the Undersigned by telephone if direct conversation would be helpful.

Respectfully Submitted,

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